

THE CARROT FAMILY IN OHIO.*

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AMMIACEAE, CARROT FAMILY.

Herbs with alternate, simple or compound, frequently dissected leaves, often with sheathing or dilated petioles, and solid or hollow often grooved stems. Inflorescence a simple or compound umbel with or without involucre and involucels, rarely a head, usually with numerous flowers. Flowers small, commonly white, yellow, or greenish, or occasionally of other colors; usually bisporangiate, epigynous, tet-racyclic, choripetalous, actinomorphic, or the marginal ones slightly zygomorphic; andrecium, calyx and corolla pentamerous, the calyx commonly minute or suppressed; gynecium of two carpels. Ovulary bilocular, styles two, filiform, distinct, straight or recurved after flowering, often borne on a conic or depressed stylopodium; ovules one in each cavity, pendulous, anatropous, with a single integument. Ripe fruit a dry schizocarp, often flattened dorsally or laterally, splitting into the two-seeded carpels (mericarps) and usually supported on the summit of a slender axis (carpophore). Carpels or mericarps each with 5 primary ribs in their pericarps or rarely ribless, and in some genera with 4 additional secondary ones, the ribs of some of them often winged. Pericarp membranous or corky thickened, usually containing oil-tubes under or between the ribs and on the commissural sides, sometimes irregularly scattered, and sometimes none.

PHYLETIC SYNOPSIS.

- I. Mericarps with woody fibrous endocarp without a carpophore.
(Hydrocotylatae) (Hydrocotylae) Hydrocotyle.
- II. Mericarps with a soft parenchymatous endocarp; exocarp seldom smooth; style long with a capital stigma, surrounded at the base by a ring-like stylopodium; oil-tubes various. (Saniculatae) (Saniculeae).
 - A. Fruit ribless, flowers scaly, densely capitate.
Eryngium.
 - B. Fruit ribless, flowers not scaly, ours having fruit with dense prickles; umblets globose.
Sanicula.
- III. Mericarps with soft parenchymatous endocarp, occasionally hardened by a sub-epidermal layer into a nut-like fruit. Style at the summit of the stylopodium. Oil-tubes developed laterally in the young fruit, later variously developed. (Ammiatae).
 - A. Fruit with secondary ribs most prominent, winged or barbed with prickles, ribs slender and bristly. (Dauceae). Daucus, Torilis.
 - B. Fruit with primary ribs only. Fruit linear or linear-oblong, several times longer than wide. (Scandicineae) Deringa, Chaerophyllum, Washingtonia, Scandix.

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- C. Fruit with primary ribs only, fruit oblong to ovoid or globose, not more than twice as long as wide. (Ammieae).
1. Fruit nearly terete.
 - a. Flowers yellow.
Thaspium.
 - b. Flowers white.
Ligusticum, Coriandrum, Aethusa.
 2. Fruit flattened dorsally.
 - a. Flowers yellow.
Pastinaca, Anethum.
 - b. Flowers white.
Heracleum, Angelica, Conoselinum, Oxypolis.
 3. Fruit flattened laterally.
 - a. Flowers yellow.
Zizia, Taenida, Apium, Foeniculum, Bupleurum.
 - b. Flowers white.
Sium, Aegopodium, Pimpinella, Cicuta, Conium, Eulopus, Carum, Celeri, Erigenia.

KEY TO THE GENERA.

1. All leaves simple. 2
1. Some or all leaves compound or dissected. 3
2. Leaves linear, toothed; flowers white or pink in a head. *Eryngium* (2)
2. Leaves orbicular, perfoliate; flowers yellow. *Bupleurum* (24)
2. Leaves reniform or orbicular, crenate; flowers white. *Hydrocotyle* (1)
3. Umbels globose; fruit with hooked bristles. *Sanicula* (3)
3. Umbels flat, or somewhat flat, or convex; fruit bristly or smooth. 4
4. Leaves once compounded; flowers white. 5
4. Leaves decompound, flowers white or yellow; or once compounded with flowers yellow. 8
5. Leaves trifoliate. 6
5. Leaves pinnately compound. 7
6. No involuclers, irregular loose umbels. *Deringa* (6)
6. Numerous linear bracts in involuclers; 5-20 umbels in umbel rays stout. *Heracleum* (16)
7. Leaflets lanceolate, serrate; basal and lower leaves pinnatifid. *Sium* (26)
7. Leaflets lanceolate or entire, or with very few teeth in our species. *Oxypolis* (19)
8. Flowers yellow or occasionally dark purple. 9
8. Flowers white, greenish-white or pinkish. 15
9. Leaf segments linear. 10
9. Leaf segments broad, lanceolate to ovate or broader. 11
10. Pedicels $\frac{1}{8}$ in. or less long, fruit terete or nearly so. *Foeniculum* (23)
10. Pedicels $\frac{1}{8}$ - $\frac{1}{4}$ in. long, fruit flattened dorsally. *Anethum* (15)
11. Leaflets ovate, entire. *Taenida* (21)
11. Leaflets serrate, crenate, or incised. 12
12. Stem leaves pinnately compound, large, leaflets broad, doubly cleft or serrate; stem prominently grooved. *Pastinaca* (14)
12. Stem leaves ternate, basal leaves simple or compound. 13
13. Uppermost leaves linear-oblong, entire; involucre of 2-4 linear bracts. *Apium* (22)
13. None of the leaves linear-oblong, involucre none or of small bracts. 14
14. All of the flowers pediceled; fruit nearly terete. *Thaspium* (10)
14. Central flower of each umbel sessile; fruit flattened laterally. *Zizia* (20)
15. Low or slender decumbent, nearly acaulescent; leaves finely divided; umbels of 1-6 umbels. 16
15. Tall and erect; umbels of usually more than 6 many-flowered umbels. 18
16. Scapose, subtending leaf involucre to umbel; umbel of 1-4 umbels. *Erigenia* (33)
16. Branched, involucre wanting or of few small bracts. 17

17. Bracts of involucre notched at tip; fruit linear, flattened. *Scandix* (9)
17. Bracts of involucre ovate-lanceolate; carpels 5-angled. *Cherophyllum* (7)
18. Involucre leafy; umbel 2-4 in. broad, concave in fruit, central flower often purple, ovulary bristly. *Daucus* (4)
18. Involucre inconspicuous or none. 19
19. Leaf segments ovate or ovate-lanceolate, serrate or incised. 20
19. Leaves finely dissected into linear or narrow segments. 25
20. Umbels loose, 1-7 umblets; leaflets cut and deeply incised. 21
20. Umbels dense, umblets more than 7, usually numerous. 22
21. Unvolucels persistent, umbels very loose, peduncles long. *Washingtonia* (8)
21. Involucres and involucels small or none; umbels compact, opposite leaves. *Celeri* (32)
22. Involucels of numerous bracts. 23
22. Involucels of several small bracts or wanting. 24
23. Calyx-teeth acute; purple lines on stem; aquatic. *Cicuta* (29)
23. Calyx-teeth obsolete; stem leaves nearly sessile; not aquatic. *Ligusticum* (11)
24. Stylopodium depressed; divisions of the leaves pinnate, upper leaves reduced with large sheathing bases. *Angelica* (17)
24. Stylopodium conic; leaves ternate or biternate, ultimate segments stalked. *Aegopodium* (27)
25. Few long linear leaflets; aquatic plants. *Cicuta* (29)
25. Stem leaves dissected into many filiform divisions; plants not aquatic. 26
26. No involucre; basal leaves ovate or orbicular, incised, pinnate leaves. 27
26. Involucres present but may be early deciduous; all leaves divided into linear segments. 28
27. Involucels of few narrow bracts, deciduous; basal leaf segments deeply incised. *Coriandrum* (12)
27. No involucels; basal leaf segments ovate, dentate. *Pimpinella* (29)
28. Pubescent; ovulary with dense bristles. *Torilis* (5)
28. Glabrous; ovulary smooth. 29
29. Bracts of involucels setaceous, turned downward to one side; stylopodium broad and thick. *Aethusa* (13)
29. Bracts of involucels when present not turned to one side; stylopodium none, conic or depressed. 30
30. Calyx-teeth prominent; leaves ternately compound, segments linear. *Eulophus* (30)
30. Calyx-teeth minute or obsolete. 31
31. Calyx-teeth minute; leaflets pinnatisected into linear filiform segments. *Carum* (31)
31. Calyx-teeth obsolete; leaves ternate or broad, segments not filiform. 32
32. Wavy-ribbed; involucres and involucels of ovate-acuminate bracts; carpels nearly terete. *Conium* (25)
32. Ribs of carpels not wavy; involucre none or of few short bracts; involucels of narrow acuminate bracts; fruit flattened dorsally. *Conioselinum* (18)

DESCRIPTION OF SPECIES.

1. *Hydrocōtyle* L.

Prostrate herbs commonly rooting at the nodes. Leaves simple, palmately veined. Bracts of the involucre few or none. Flowers white. Calyx-teeth minute or obsolete. Fruit laterally compressed broader than long, no oil-tubes, but having a layer of oil-bearing tissue beneath the epidermis.

1. Leaves orbicular, peltate; pedicels slender. *H. umbellata*
1. Leaves orbicular or reniform, not peltate. 2
2. Flowers umbellate, umbels nearly sessile. *H. americana*
2. Umbels capitate, peduncled. *H. rotundifolia*

1. *Hydrocotyle umbellata* L. Many-flowered Marsh-Pennywort.
Perennial with glabrous creeping stem, subterranean branches tuberous; leaves simple, orbicular, crenate, peltate, petioles slender, 1-6 in. long; umbels long-peduncled, usually simple, pedicels slender; fruit strongly notched. In swamps and low ground. June-September. Portage and Stark counties.
2. *Hydrocotyle americana* L. American Marsh-Pennywort.
Stems slender, creeping, propagating by stolons; leaves thin, reniform, crenate, not peltate, petioles short, seldom over 2 in. long; umbels nearly sessile, axillary, 1 to 5-flowered. In wet soil, June-September. Cuyahoga, Summit, Wayne, Stark.
3. *Hydrocotyle rotundifolia* Roxb. Asiatic Penny-Wort.
Slender, tufted, creeping perennial; leaves reniform-orbicular; petioles slender; peduncles nearly as long as the petioles. Escaped to lawns from green-houses. Native of Asia. Summer. No specimens.

2. *Eryngium* (Tourn.) L.

Perennial herbs with spiny toothed leaves, lobed, dentate or entire; white or blue flowers in a head subtended by bracts; calyx-teeth rigid, acute, pungent; petals erect; disk expanded; fruit scaly or rough, somewhat flattened laterally, ribs nearly obsolete, oil-tubes, 5.

1. *Eryngium aquaticum* L. Button Snakeroot.
Stout glabrous perennial, 2 to 6 ft. tall; leaves mostly clasping, parallel veined, margins with bristly teeth, lower ones sometimes 3 ft. by 1½ in., upper ones smaller; heads globose-ovoid. By ponds and streams. June-September. Wyandot, Erie.

3. *Sanicula* L.

Perennial or biennial herbs with palmately 3 to 7-divided leaves, and globose umbels of small flowers; stems glabrous; umbels of few umblets; calyx-lobes usually persistent; petals obovate, inflexed; disk flat; carpels not ribbed; oil-tubes usually 5; fruit sub-globose with hooked bristles.

1. Petals and anthers yellow, calyx-lobes ovate, obtuse.....*S. gregaria*
1. Petals white.....2
2. Petals much longer than the obtuse, ovate calyx-lobes.....*S. marylandica*
2. Petals somewhat shorter than the linear-lanceolate, acute calyx-lobes....
S. canadensis
2. Petals about half as long as the linear, rigid, in-curved calyx-lobes...*S. trifoliata*
1. *Sanicula gregaria* Bickn. Clustered Snakeroot.

Rather weak slender stemmed perennials with stems usually clustered and umbellate branched, 1 to 3 ft. high; leaves thin, light green, 5-foliate, segments stalked, obovate, acuminate, sharply serrate with bristle tipped teeth, involucreal leaves foliaceous; some staminate flowers in separate heads, petals yellowish, much longer than the calyx-lobes, anthers yellow; fruit with weak bristles and long, persistent, recurved styles. Rich woods. May-July. Rather general.

2. *Sanicula marylandica* L. Black Snakeroot.

Glabrous perennials, 1½ to 2 ft. high, topped by 2 to 4-rayed, long-peduncled, compound umbel; leaves few, those near the base long-petioled, upper ones nearly sessile, bluish-green, 5 to 7-parted, irregularly serrate or incised; involucre leaves 3-parted, much smaller; staminate flowers often in separate heads, petals greenish-white, little longer than the calyx-lobes, anthers white; fruit sessile, covered by stout bristles, the long recurved styles persistent. In rich woods. May-August. General.

3. *Sanicula canadensis* L. Short-styled Snakeroot.

Widely branched biennial, 1 to 4 ft. high, leafy, branches forked; all leaves petioled, 3 to 5-divided, segments to 3½ in. long, dull green, involucre leaves small, involucels bract-like; staminate flowers few, never in separate heads, petals white, shorter than the calyx-lobes; fruit nearly sessile, sub-globose, styles shorter than the bristles. In dry woods. May-August. General and abundant.

4. *Sanicula trifoliata* Bickn. Large-fruited Snakeroot.

Slender, alternate-branched biennial, 1 to 2½ ft. tall; leaves thin, bright green, slender-petioled, 3-parted, lateral segments often cleft, segments stalked, broadly ovate, coarsely doubly serrate; petals white, about half as long as the calyx-lobes; fruit ovoid, styles shorter than the bristles. Rich hilly woods. June-August. Southern and eastern part of the state to Geauga, Morrow and Preble Counties.

4. *Daucus* (Tourn.) L.

Involucre foliaceous, pinnately parted; involucels of numerous bracts; calyx-teeth obsolete; umbels many-flowered; ribs slender; petals obovate, inflexed at the tip, those of the outer flowers often 2-lobed; oil-tubes solitary under the secondary ribs.

1. *Daucus carota* L. Queen Anne's Lace.

Bristly-stemmed biennial, 1 to 3 ft. tall, from a fleshy conic root; leaves 2 to 3-pinnate, segments lanceolate, pennatifid, the upper ones similar, but smaller; umbels 2 to 4 in. broad, very concave in fruit; flowers white, central one often purple; fruit bristly on wings. A common weed in waste places, pastures, and roadsides. The origin of the cultivated carrot and the only one of the family which is regarded for its beauty. Naturalized from Europe. June-September. General and abundant.

5. *Torilis* Adans.

Involucre of few bracts or wanting; involucels of several narrow bracts; calyx-teeth triangular, persistent; petals inflexed at tip; stylopodium thick, conic; fruit flattened laterally, bristly.

- 1. Umbels sessile or short stalked.....*T. nodosa*
- 1. Umbels long-peduncled, compound.....*T. anthriscus*

1. *Torilis nodosa* (L.) Gaertn. Knotted Hedge-Parsley.

Decumbent, spreading, hispid or pubescent annuals, branched at base, branches 6 to 12 in. long; leaves bi-pinnate, segments linear-oblong; umbels sessile or short-stalked opposite the leaves at the nodes, capitate; flowers white; fruit sessile, ovoid, with long prickles often confined to one side. In waste places. May-August. No specimens.

2. *Torilis anthriscus* (L.) Gmel. Erect Hedge-Parsley.

Erect, slender, hispid annual, 2 to 3 ft. tall; leaves bi-pinnate, upper may be simply pinnate, segments may be lanceolate, dentate or pinnatifid; umbels slender-peduncled, 1 to 2 in. long; flowers white; fruit ovoid with dense bristles. Adventive from Europe. In waste places. July-September. Hamilton Co.

6. *Deringa* Adans.

Irregular umbels of white flowers; no involucre or involucels; calyx-teeth obsolete; stylopodium conic; fruit laterally compressed, glabrous; ribs nearly equal; oil-tubes solitary in intervals and beneath ribs.

1. *Deringa canadensis* (L.) Ktz. Honewort.

Erect, rather slender, freely branching perennial, glabrous, 8 in. to 3 ft. tall; lower and basal leaves long-petioled, 3-parted, segments ovate, serrate, incised, or lobed, 1 to 4 in. long; upper ones nearly sessile, uppermost a margined, incised stalk; umbels of 4 to 10 umblets; fruit glabrous, one-eighth to one-fourth in. long, pointed at both ends. In open woods. May-August. General.

7. *Chaerophyllum* (Tourn.) L.

Small umbels of white flowers; involucre none, or of 1 or 2 bracts; involucels of many linear bracts; calyx-teeth obsolete; stylopodium conic, small; fruit oblong, flattened laterally, ribs equal, oil-tubes solitary in the intervals.

1. *Chaerophyllum procumbens* (L.) Crantz. Spreading Chervil.

Much branched, slender, spreading annual, 6 to 20 in. tall; decom-pound leaves, segments ovate, pinnatifid, lower ones slender petioled, upper ones nearly sessile; umbels few rayed, few flowers in an umblet; fruit glabrous or slightly pubescent, one-fourth to one-half inch long, contracted, notched at the base. In moist ground. April-June. General.

8. *Washingtonia* Raf.

Aromatic clustered roots; umbels few rayed; involucre and involucels small or none; calyx-teeth obsolete; fruit elongated, ribs acute, nearly equal, oil-tubes obsolete.

1. Stems and leaves pubescent.....*W. claytoni*
 1. Glabrous or only slightly pubescent at the nodes.....*W. longistylis*

1. *Washingtonia claytoni* (Mx.) Britt. Downy or Woolly Sweet-Cicely.

Erect perennials, downy, especially when young, $\frac{1}{2}$ to 3 ft. tall, branched above, stems often stained a dull red; lower leaves ternately decomposed, large, often 1 ft. broad, long petioled, the upper ones less compound, nearly sessile; segments ovate, incised, dentate; umbels irregular, long-peduncled, few flowers in umbel opposite leaves; flowers small, white; fruit bristly, $\frac{1}{2}$ in. long, constricted at the base. In woods. General.

2. *Washingtonia longistylis* (Torr.) Britt. Anise-root.

Similar to the preceding species, but glabrous when mature, except at the nodes; leaflets less cleft; fruit about 1 inch long. In woods. May-June. General.

9. *Scândix* (Tourn.) L.

Involucels none or occasionally one bract; petals usually unequal; stylopodium short; fruit linear, flattened laterally, beak much longer than fruit; primary ribs prominent, secondary ribs wanting, oil-tubes solitary or wanting.

1. *Scândix pectenvenêris* L. Venus' Comb.

Slender annual, 6 to 18 in. tall, sparingly pubescent, branched, ascending; leaflets pinnatisected, lobes acute; no involucre, bracts of the involucels notched at the tip; umbels compound; flowers nearly sessile in the umbels; beak of fruit $1\frac{1}{2}$ to $2\frac{1}{2}$ in. long, edged with stiff hairs. Waste places. Fugitive from Eurasia. May-August. Lake Co.

10. *Thâspium* Nutt.

Involucre none or of few small bracts; involucels of several small bracts; all flowers pediceled; calyx-teeth conspicuous, acute; no stylopodium; styles long; fruit ovoid, only slightly flattened dorsally, some or all ribs winged, oil-tubes solitary in intervals.

1. Glabrous, leaves mostly ternate, 1-2 ft. tall.....*T. trifoliatum*.
1. More or less pubescent, especially at nodes, biternate, 2-4 ft. tall.....2
2. Leaf segments ovate, acute, serrate, or cleft.....*T. barbinode*.
2. Leaf segments pinnatifid into linear-oblong lobes.....*T. pinnatifidum*.

1. *Thâspium trifoliatum* (L.) Britt. Purple Meadow-Parsnip.

Erect glabrous perennial, 1 to 2 ft. tall; basal leaves long-petioled, sometimes simple, cordate, serrate; stem leaves short-petioled, ternate or biternate, segments ovate-lanceolate, crenate, thick; umbels small; flowers yellow or purple; fruit ovoid-globose, all ribs winged. In woods and thickets. April-July. General.

2. *Thâspium barbinode* (Mx.) Nutt. Hairy-jointed Meadow-Parsnip.

Divergently branched perennials, 2 to 4 ft. tall, pubescent at nodes and sometimes on young shoots and umbels; leaves 1 to 3-ternate, segments ovate, thin, coarsely serrate, acute; umbels small, compound; flowers light yellow; fruit oval, finely pubescent. Along streams. May-June. General.

3. *Thaspium pinnatifidum* (Buckl.) Gr. Cut-leaf Meadow-Parsnip.

Similar to the preceding species, but more pubescent; leaves distant, pinnatisected into numerous linear or oblong lobes, basal leaves large and long-petioled. Woods. June-July. Hamilton Co.

11. *Ligusticum* L.

Erect herbs with aromatic roots and large umbels of white flowers; involucre of several deciduous bracts or wanting; involucels of numerous linear bracts; calyx-teeth obsolete; stylopodium conic; fruit scarcely flattened, oblong or ovoid, ribs prominent, oil-tubes 2 to 6 in intervals.

1. *Ligusticum canadense* (L.) Britt. Angelica.

Stout glabrous perennials, much branched, 2 to 6 ft. tall; leaves ternately once or twice compounded, segments ovate, broad, serrate, acute; those of the uppermost leaves lanceolate, entire; umbels compound, sometimes 10 in. broad. In rich woods. June-August.

12. *Coriandrum* (Tourn.) L.

Involucres wanting; involucels of few narrow bracts; calyx-teeth ovate, acute; umbels many flowered; fruit not flattened, ribs slender, oil-tubes solitary; stylopodium conic.

1. *Coriandrum sativum* L. Coriander.

Slender glabrous annuals, 2 ft. or less tall; leaves pinnately compound, lower leaflets ovate, deeply cleft and toothed, upper leaves deeply cut into linear segments; umbels compound, 1 to 2 in. broad, peduncles slender; flowers white or pinkish, petals unequal; fruit globose, not divided at commissure. Waste places. Adventitious from Eurasia. No specimens.

13. *Aethusa* L.

Bracts of involucels setaceous, turned downward to one side; no involucre or a single bract; umbels terminal or opposite leaves; calyx-teeth obsolete, stylopodium broad; fruit dorsally compressed, ribs prominent, nearly equal, oil-tubes solitary in the intervals.

1. *Aethusa cynapium* L. Fool's Parsley.

Leafy, dichotomously branched annual, 1 to 2½ ft. tall; leaves 2 or 3-pinnately compounded, shining, ultimate segments linear, acute, petiole bases dilated; umbels long-petioled; flowers white; fruit ovoid-globose, slightly flattened. A fetid poisonous herb, adventive from Europe. In waste places. June-October. Lake Co.

14. *Pastinaca* L.

Erect coarse herbs with a fleshy tap-root; usually no involucre or involucels; calyx-teeth obsolete, stylopodium depressed; fruit oval, glabrous, lateral ribs of the 2 carpels contiguous and forming a broad margin to the fruit.

1. *Pastinaca sativa* L. Wild Parsnip.

Biennial or rarely annual herbs, glabrous or slightly pubescent, branched, deeply grooved stem, 2 to 5 ft. tall; leaves pinnately compound, lower often 1½ ft. long, upper much smaller, segments ovate, lobed and incised, dentate, sessile; flowers yellow; fruit broadly oval, much flattened dorsally. The origin of the cultivated parsnip. Some persons are poisoned by touching the leaves. Roadsides and waste places. May-October. Common.

15. *Anethum* (Tourn.) L.

Involucres and involucels wanting; fruit oblong, much flattened dorsally, lateral ribs winged, dorsal ones slender, sharp; oil-tubes solitary in the intervals.

1. *Anethum graveolens* L. Dill.

Erect, glabrous, much branched annuals, 1 to 3 ft. tall; leaves finely dissected with sheathing petioled strongly nerved; umbels to 6 in. broad; flowers yellow. Leaves used for seasoning. Introduced from Europe and sometimes escaped from cultivation. July-September. Franklin Co.

16. *Heracleum* L.

Erect, mostly pubescent herbs; bracts of involucres few or none; involucels of numerous linear bracts; calyx-teeth obsolete or small, petals clawed, obcordate, stylopodium thick; fruit much flattened dorsally, lateral ribs winged, oil-tubes conspicuous in each interval, extending to about the middle of the fruit.

1. *Heracleum lanatum* Mx. Cow-Parsnip.

Very stout perennials, 4 to 8 ft. tall, stems often 2 in. in diameter at base, ridged, densely pubescent; leaves ternate, segments broadly ovate, irregularly toothed, stalked; umbels 6 to 12 in. broad, peduncles stout; flowers white or pinkish; fruit obovoid, finely pubescent. In moist ground. May-July. Rather general.

17. *Angelica* L.

Tall, erect, branching herbs; involucre none or inconspicuous; involucels small or wanting; calyx-teeth obsolete or small; tip of petals inflexed; flowers white in many-flowered umbels; stylopodium depressed; fruit oval, dorsally compressed, broadly winged.

1. Umbels glabrous or nearly so, leaf-segments acute.....*A. atropurpurea*
 1. Umbels densely pubescent, leaf-segments obtuse.....*A. villosa*

1. *Angelica atropurpurea* L. Great or Purple-stemmed Angelica.

Stout glabrous perennials, umbels occasionally slightly hairy; stems dark purple, 4 to 6 ft. tall; lower leaves often 2 ft. wide, biternate, ovate, acute, thin, sharply serrate; umbels sometimes 10 in. broad; fruit broadly oval. In swamps and moist ground. May-August. Rather general.

2. *Angelica villòsa* (Walt.) B. S. P. Hairy Angelica.

Rather slender perennials, 2 to 6 ft. tall; upper stem and umbels densely tomentose-canescens; lower leaves biternate, segments thick, ovate, obtuse, finely serrate; upper ones much reduced; umbels 2 to 4 in. broad; fruit oval, pubescent. Dry rocky soil. July-September. Eastern half of state west to Adams, Fairfield and Richland Counties.

18. *Conioselinum* Hoffm.

Erect branching herbs; involucre none or inconspicuous; involucels of narrow linear bracts; calyx-teeth obsolete; petals inflexed at tip; stylopodium depressed-conic; fruit oval, flattened dorsally, broadly winged.

1. *Conioselinum chinènsis* (L.) B. S. P. Hemlock Parsley.

Slender glabrous perennials, 2 to 5 ft. tall; lower leaves broad, long-petioled, upper ones nearly sessile, all decompound, leaflets pinnatifid; umbels $1\frac{1}{2}$ to 2 in. broad, peduncles slender; flowers white; fruit oval, ribbed. In swamps and on cold cliffs. August-September. Lake and Summit Counties.

19. *Oxypolis* Raf.

Erect marsh herbs; involucre of few linear bracts or wanting; involucels of several small bracts or none; calyx-teeth acute; stylopodium thick; fruit flattened dorsally, winged, oil-tubes solitary in the intervals.

1. *Oxypolis rigidus* (L.) Raf. Cowbane.

Rather slender erect perennials, 2 to 6 ft. tall, glabrous; leaves simply pinnate, 3 to 9 leaflets, remotely toothed, linear to lanceolate; $1\frac{1}{2}$ to 3 in. long; umbels compound, broad; flowers white; peduncles slender; fruit oval. Herbage is supposed to be poisonous to cattle. In swamps. August-September. From Erie, Franklin, Ross and Adams Counties westward.

20. *Zizia* Koch.

Erect perennial herbs; flowers yellow, central one of each umbel sessile; involucre none; involucels of several small bracts; calyx-teeth prominent, stylopodium wanting, styles long; fruit ovate to oblong, glabrous, somewhat flattened laterally, not winged, oil-tubes solitary in the intervals and under each rib.

1. Basal leaves ternately compound.....*Z. aurea*
 1. Basal leaves simple, cordate.....*Z. cordata*

1. *Zizia àurea* (L.) Koch. Golden Meadow-Parsnip.

Erect, glabrous, branched perennials, 1 to 3 ft. tall; basal leaves long-petioled, 2 to 3-ternate, leaflets ovate to lanceolate, sharply serrate; upper ones ternate with shorter sheathing petioles, compound umbels, 2 to 3 in. broad; no involucre; petals brilliant yellow, calyx yellowish; fruit oblong. In fields, meadows, and swamps. April-August. Rather general.

2. *Zizia cordata* (Walt.) D. C. Heart-leaf Meadow-Parsnip.

Stout, erect, branched perennials, glabrous or slightly pubescent; basal and lower leaves simple, cordate or orbicular, crenate, long-petioled; upper ones with 3 to 5 segments, ovate, crenate or lobed; umbels of 7 to 16 umblets; fruit ovoid. May-June. Lorain, Richland, Wyandot, Madison, Franklin, Warren, Gallia, Washington Counties.

21. *Taenidia* Drude.

Involucres and involucels mostly wanting; flowers yellow, calyx-teeth obsolete; fruit flattened laterally, oil-tubes numerous; stylopodiums broad, conic.

1. *Taenidia integerrima* (L.) Drude. Yellow Pimpernel.

Slender branching perennial, glabrous, glaucous, 1 to 3 ft. tall; leaves 2 to 3-ternate, lower long-petioled, upper with short dilated petiole, segments oval, entire; umbels of 10 to 20 umblets, peduncle slender; fruit oblong, short, glabrous. Dry sandy or gravelly woods. May-June. General.

22. *Apium* (Tourn.) L.

Involucre of 2 to 4 linear bracts; calyx-teeth obsolete, stylopodium conic, short; fruit ovate, ribs filiform, oil-tubes solitary in intervals.

1. *Apium petroselinum* L. Garden Parsley.

Erect, much branched biennial, 1 to 3 ft. tall, glabrous; lower leaves decompose, leaflets ovate, much incised, upper leaves linear-oblong and entire; umbels spreading, 1 to 2½ in. broad, axillary and terminal; flowers greenish-yellow and inconspicuous; fruit ovoid, glabrous. Escaped from gardens. Introduced from Europe and cultivated for its leaves and roots. Summer. Madison Co.

23. *Foeniculum* Mill.

Stout aromatic herbs; involucres and involucels wanting; calyx-teeth obsolete, stylopodium large, conic; ribs prominent, oil-tubes solitary in intervals.

1. *Foeniculum foeniculum* (L.) Karst. Fennel.

Glabrous, branched perennial, 2 to 4 ft. tall; leaves finely dissected into numerous filiform segments; petioles broad, clasping umbels large, peduncles rather glaucous; no involucres or involucel flowers yellow; fruit oblong, nearly terete, glabrous. Leaves have medicinal value. Native of Europe, escaped from cultivation. July-September. Hocking, Scioto, Erie Counties.

24. *Bupleurum* (Tourn.) L.

Erect herbs with simple, entire, clasping or perfoliate leaves; no involucres, involucels of 5 conspicuous bracts, about as long as the peduncles; calyx-teeth obsolete, tip of petals inflexed, stylopodium conic; fruit oval, flattened laterally, no oil-tubes.

1. *Bupleurum rotundifolium* L. Hare's Ear or Through Wax.

Smooth, branching annuals, 1 to 2 ft. tall; leaves ovate, entire, perfoliate; terminal umbel or yellow flowers, 3 to 6 umblets; involucels very conspicuous; fruit smooth. In fields. From Europe. July-August. Warren Co.

25. *Conium* L.

Involucres and involucels of ovate acuminate bracts; calyx-teeth obsolete, petals obcordate, tip inflexed; fruit glabrous, slightly flattened laterally; carpels wavy-ribbed, oil-tubes none, but have a layer of oil-secreting tissue.

1. *Conium maculatum* L. Poison Hemlock.

Much branched, glabrous biennial, 2 to 5 ft. tall; stems spotted with purple; lower leaves petioled, upper nearly sessile, all decompose, leaflets pinnatifid, petioles much dilated at base; umbels 1 to 3 in. broad, peduncles slender, 1 to 1½ in. long; flowers white; fruit oblong with prominent ribs. The whole plant, especially the seed is poisonous to man and animals. In waste places. June-July. Montgomery, Knox, Lake Counties.

26. *Sium* (Tourn.) L.

Erect herbs with stem leaves simply pinnate, lower ones often pinnatisected; involucres and involucels of many narrow bracts; calyx-teeth minute, tip of petals inflexed; ribs prominent, oil-tubes 1 to 3 in intervals.

1. *Sium cicutaefolium* Schrank. Water-parsnip.

Stout, branched perennials, 2 to 6 ft. tall; leaflets variable, linear, in pairs, 7 to 17, acute, serrate, lowest are often finely dissected; umbels terminal and axillary, 2 to 3 in. broad; flowers white; fruit ovate, compressed, ribs prominent. Supposed to be poisonous to stock. In swamps. July-October. General.

27. *Aegopodium* L.

Involucres and involucels wanting or rarely few deciduous bracts, umbels dense; calyx-teeth obsolete, petals inflexed, stylopodium conic; umbels many-flowered; carpels obscurely 5-angled, ribs equal, filiform, no oil-tubes.

1. *Aegopodium podagraria* L. Goutweed.

Coarse glabrous perennial, 1½ to 2½ ft. tall, from a creeping rootstock; lower leaves biternate, primary divisions stalked leaflets ovate, acute or acuminate, often oblique at base, sharply serrate, upper leaves simply ternate; umbels 1½ to 2½ in. broad; flowers white; fruit oblong, styles deflected. In waste places, adventive from Europe. June-August. Lake Co.

28. *Pimpinella* L.

Erect herbs with stem leaves simply pinnate, lower often pinnatisected; involucre and involucels of many narrow bracts; calyx-teeth minute, tips of petals inflexed; ribs prominent, oil-tubes 1 to 3 in intervals.

1. *Pimpinella saxifraga* L. Pimpernel.

Glabrous, branched perennials, 1 to 2 ft. tall; segments of lower leaves 9 to 19, ovate, sharply serrate and incised, upper ones of fewer and narrower segments; umbels terminal and axillary, peduncles slender, 7 to 20 umblets; flowers white; fruit ovate to ovoid, compressed. Roadsides and waste places. Adventive from Europe. June-October. No specimens.

29. *Cicuta* L.

Erect herbs with compound terminal umbels of white flowers; involucre of few bracts or none, involucels of many bracts; calyx-teeth prominent, acute, stylopodium depressed; fruit slightly flattened laterally, ribs corky, oil-tubes solitary in intervals.

1. Stout, leaf-segments lanceolate to lanceolate-oblong.....*C. maculata*
 1. Slender, leaf-segments linear.....*C. bulbifera*

1. *Cicuta maculata* L. Water Hemlock, Wild Parsnip.

Stout, branching, glabrous perennials, 3 to 6 ft. tall, from fleshy roots; stems marked with purple lines; lower leaves large, often 1 ft. long, 2 to 3 pinnate, long petioles, upper leaves smaller, leaflets ovate to lanceolate, sharply and coarsely serrate umbels many-flowered, pedicels unequal; flowers white; fruit shallowly grooved at commissure. Whole plant violently poisonous to man and animals. Has destroyed many human lives. June-August. In moist soil. General.

2. *Cicuta bulbifera* L. Bulb-bearing Water-Hemlock.

Slender much-branched perennials, 1 to 3½ ft. tall; lower leaves 2 to 3-pinnate, segments linear, sparingly serrate, upper ones less divided and bearing clusters of bulblets in axils. Supposed to be very poisonous. In swamps. July-September. Northern part of the State to Perry and Clark Counties.

30. *Eulophus* Nutt.

Involucres of one bract or none; involucels of narrow acuminate bracts; calyx-teeth prominent, petals obovate, tip inflexed, stylopodium conic; fruit glabrous, styles persistent, recurved, ribs filiform, 1 to 5 oil-tubes in intervals; umblets many-flowered.

1. *Eulophus americanus* Nutt. Eastern Eulophus.

Slender glabrous perennials, 3 to 5 ft. tall, from deep tuberous roots; basal and lower leaves large, long-petioled, 2 to 3-divided into linear segments, upper leaves similar but smaller and with shorter petioles; umbels terminal, 2 to 4 in. broad, peduncles slender; flowers white or pinkish; fruit oblong. In dry soil. July. No specimens.

31. *Càrum* L.

Involucres and involucels of few to many bracts, inconspicuous, and may be early deciduous; calyx-teeth minute, petals inflexed, stylopodium conic; fruit slightly compressed laterally, ribs filiform, oil-tubes solitary in intervals.

1. *Carum càrui* L. Caraway.

Branching, glabrous biennials or perennials, 1 to 2 ft. tall; all leaves pinnatisected into filiform or linear divisions, bases of petioles much dilated; umbels 1 to 2½ in. broad; flowers white, occasionally pink or yellowish; fruit oblong, ribs conspicuous. Seeds have medicinal value and are used in flavoring. Native of Europe. Escaped from cultivation. May-September. Columbiana, Lorain, Ashland, Fulton Counties.

32. *Cèleri* Adans.

Involucre and involucels small or none; calyx-teeth obsolete, petals obovate, inflexed at the tip, stylopodium depressed; carpels 5-angled, ribs prominent; umbels terminal and opposite the leaves.

1. *Celeri gravèolens* (L.) Britt. Celery.

Erect glabrous perennials, 1 to 3 ft. tall; leaves pinnate, lower ones long stalked, upper nearly sessile, leaflets thin, broadly ovate, coarsely toothed and incised; umbels of 2 to 7 umblets, opposite the leaves and terminal; flowers very small, white; fruit ovoid, small. Petioles are eaten and seeds used in seasoning. Native of Europe. Escaped from cultivation. May-July. Highland County.

33. *Erigenia* Nutt.

Glabrous herbs from a deep tuber; calyx-teeth obsolete, petals flat, obovate or spatulate; fruit nearly orbicular, notched at both ends, ribs slender, oil-tubes in intervals.

1. *Erigenia bulbòsa* (Mx.) Nutt. Harbinger of Spring. Pepper and Salt.

Nearly acaulescent perennials, scapose stem, 3 to 9 in. tall; leaves few, petioled, 2 to 3-ternate, segments oblong, obtuse; upper one involucrate, smaller, short-petioled, petioles much dilated at base; umbels terminal, compound, few umblets; flowers white, anthers dark purple; fruit broader than long. Deciduous woods. February-June. General.